Effectiveness of long lasting insecticidal nets and intermittent preventive treatment in pregnancy uptake among pregnant women attending antenatal care in Uganda

Introduction
Malaria in pregnancy (MiP) remains a preventable cause of adverse maternal, fetal and newborn health outcomes in Uganda. Health management information system (HMIS) data shows that 215,024 facility-based MiP cases were reported in 2018 alone. The USAID MAPD program has supported Uganda’s efforts to combat MiP since 2017. This study investigates the relationship between MiP case numbers and the uptake of preventive interventions among pregnant women attending antenatal care (ANC) in Uganda.

Methods
• The study assessed HMIS data from health facilities between January 2017 and December 2019 in five program-supported regions.
• We collected HMIS data on MiP cases, uptake of three or more doses of intermittent preventive treatment in pregnancy (IPTp3+) and women receiving long lasting insecticidal nets (LLINs) as a proportion of those attending the first antenatal care visit (ANC 1).
• Correlation analysis investigated plausible trends between preventive interventions and cases within each region.

Results
• IPTp3+ increased from 5 percent (2017) to 37 percent (2018) to 64 percent (2019).
• Pregnant women receiving LLINs at ANC 1 increased from 48 to 66 to 79 percent in the same period.
• We observed plausible trends between increasing IPTp3+ rates and decreasing MiP cases, and increasing ANC 1 LLIN uptake and decreasing MiP cases, in four out of five regions.
• The West Nile region was an exception, with increases in IPTp3+ and LLIN uptake associated with increased case numbers.

Conclusion
Increasing IPTp3+ and LLIN provision at ANC likely reduces MiP cases. The situation in West Nile could indicate better health-seeking behavior and/or the regional malaria context. Repeating this study once interventions are well established could be valuable in forming stronger relational conclusions. Behavior change communication to drive early and adequate ANC coverage; quality IPTp3+ provision, including strictly observed therapy; LLIN use and care; and robust supply chain and data systems should be maintained and scaled up.

Acknowledgements
This study and poster was made possible by USAID and MAPD and do not reflect the views of USAID or the United States Government.

Table 1: Correlation between MiP cases, IPTp3+ and women receiving LLINs as a proportion of those attending ANC 1

<table>
<thead>
<tr>
<th>Region</th>
<th>IPTp3+ uptake r value p value</th>
<th>LLIN uptake r value p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bunyoro</td>
<td>-0.04 0.910</td>
<td>-0.25 0.419</td>
</tr>
<tr>
<td>Kampala</td>
<td>-0.13 0.693</td>
<td>-0.28 0.359</td>
</tr>
<tr>
<td>Masaka</td>
<td>-0.8 0.002</td>
<td>-0.61 0.034</td>
</tr>
<tr>
<td>Rweoni</td>
<td>-0.25 0.425</td>
<td>-0.37 0.240</td>
</tr>
<tr>
<td>West Nile</td>
<td>-0.71 0.009</td>
<td>-0.5 0.037</td>
</tr>
</tbody>
</table>

Figure 1: Proportion of women receiving IPTp3+ and LLINs at ANC